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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,546	06/25/2003	Wei-Yi Lin	10112271	5452

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EXAMINER

RIELLEY, ELIZABETH A

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/603,546	Applicant(s) LIN ET AL.	
	Examiner Elizabeth A. Rielley	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-9 and 14-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9 and 14-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/7/2005 has been entered.

Response to Amendment

Amendment filed 12/7/2005 has been entered and considered by the Examiner. Claims 3-4 and 10-13 have been canceled. Claims 23-29 have been added. Currently, claims 1, 2, 5-9, and 14-29 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1, 2, 5, 6, 8, 9, 14, 16, 21, and 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda et al (JP 2001-138482) in view of Barton et al (US 6617772).

In regard to claims 1, 5 and 6, Toyoda et al ('482) teaches a method of repositioning display spacers using inductive attraction, comprising: providing spacers (2, 1) susceptible to inductive attraction (paragraph 23); providing an inductive chuck (4), in this case a magnet or an electrostatic chuck (paragraph 22), to attract the spacers (paragraph 22); providing a substrate (5); using the inductive chuck to position the spacers in desired positions on the substrate (figures a-d; paragraphs 19-24). Toyoda fails to disclose the spacers are magnetic. Barton et al ('772) teach magnetic spacers (column 3 lines 64-65; claim 44) in order to produce an improved display (abstract). It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of positioning spacers of Toyoda et al ('482) with the spacer material of Barton et al ('772). Motivation for combining would be to produce an improved display.

In regard to claim 2, Barton et al ('482) continue to teach the spacers are spacers of a field emission display (column 6 lines 46-57). Motivation for combining would be to produce an improved display.

In regard to claim 8, Barton et al ('482) continue to teach that the spacers are partially comprised of magnetic material (column 3 lines 64-65). Motivation for combining would be to produce an improved display.

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In regard to claim 9 Barton et al ('772) continue to teach spacers have two or more layers, at least one of which is made of magnetic materials (column 3 lines 64-65; claim 44; column 30 lines 20-30).

Motivation for combining would be to produce an improved display.

In regard to claim 14, Toyoda et al ('482) teaches that the spacers are comprised of metal, alloy, dielectric, ceramic, or glass materials, or a combination thereof (paragraph 19).

In regard to claim 16, Barton et al ('772) continues to teach the shapes of spacers have two or more cross points, comprising comb, lattice, grid, or zig-zag shapes or a combination thereof (figure 7).

Motivation for combining would be to produce an improved display.

In regard to claim 21, Toyoda et al ('482) teaches using an alignment step when locating the spacer onto a desired position on the substrate (paragraph 29).

In regard to claim 23, Toyoda et al ('482) teaches a magnet force lifts the spacers (1, 2) and brings them into contact with the inductive chuck (figures a-d; paragraphs 19-24).

In regard to claim 24, Toyoda et al ('482) teaches the spacers are released from the inductive chuck by interrupting the magnetic force (figures a-d; paragraphs 19-24).

In regard to claim 25, Toyoda et al ('482) teaches a method of repositioning display spacer using inductive attraction, comprising; providing spacers (2, 1); providing an inductive chuck to attract the spacers by electrostatic force (4; paragraphs 22-24); providing a substrate (5); and using the inductive chuck to position the spacer in desired positions on the substrate (figures a-d; paragraphs 19-24). Toyoda

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fails to disclose the spacers are made of electrostatic material¹. Barton et al ('772) teach electrostatic spacers (column 3 lines 64-65; claim 44) in order to produce an improved display (abstract). It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of positioning spacers of Toyoda et al ('482) with the spacer material of Barton et al ('772). Motivation for combining would be to produce an improved display.

In regard to claim 26, Toyoda et al ('482) teaches an electrostatic force lifts the spacers (1, 2) and brings them into contact with the inductive chuck (figures a-d; paragraphs 19-24).

In regard to claim 27, Toyoda et al ('482) teaches the spacers are released from the inductive chuck by interrupting the electrostatic force (figures a-d; paragraphs 19-24).

In regard to claim 28, Barton et al ('772) continue to teach spacers have two or more layers, at least one of which is made of magnetic materials (column 3 lines 64-65; claim 44; column 30 lines 20-30). Motivation for combining would be to produce an improved display.

In regard to claim 29, Toyoda et al ('482) teaches that the spacers are made of metal, alloy, dielectric, ceramic, or glass materials, or a combination thereof (paragraph 19).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda et al (JP 2001-138482) in view of Barton et al (US 6617772) in further view of Sakaguchi (US 6906456).

¹ http://en.wikipedia.org/wiki/Magnetic_field

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Toyoda/Barton disclose all the limitations set forth, as described above, except that the spacers are completely comprised of magnetic materials. Sakaguchi teaches the spacers are completely comprised of magnetic materials in order to enhance the display quality (column 4 lines 57-67). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the display of Toyoda/Barton with the spacer of Sakaguchi. Motivation to combine would be to improve the display quality.

Claims 15 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda et al (JP 2001-138482) in view of Barton et al (US 6617772) in further view of Amrine et al (US 5717287).

In regard to claim 15, Toyoda/Barton teach all the limitations set forth, as described above, except the spacers are cylindrical, X-, I-, L-, or bar-shaped or a combination thereof. Amrine et al ('287) discloses the shape of the spacers are cylindrical, X-, I-, L-, or bar-shaped or a combination thereof (column 3 lines 7-10) in order to prevent breakage and cracking during thermal cycles in the manufacturing of the display (column 3 lines 1-10). It would have been obvious as the time of the invention to one of ordinary skill in the art to combine the method of positioning spacers of Toyoda/Barton with the shape of the spacers of Amrine et al ('287). Motivation for combining would be to prevent breakage and cracking during thermal cycles in the manufacturing of the display.

In regard to claims 17-20, Toyoda/Barton teach all the limitations set forth, as described above, except the substrate is either an anode or cathode plate of a flat panel display and on a field emission display. Amrine et al ('287) discloses manufacturing the spacer on either the anode (110; figure 1 and 4; column 4 lines 15-28) or cathode (230; figure 6; column 5 line 28 to column 6 line 17) on both flat panel displays and field emission displays (column 1 lines 10-13) in order to provide an irreversible, inert bond

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to both displays (column 1 lines 53-56 and 10-13). It would have been obvious as the time of the invention to one of ordinary skill in the art to combine the method of positioning spacers of Toyoda/Barton with the structure of the display of Amrine et al ('287). Motivation for combining would be to provide an irreversible, inert bond to both types of displays.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda et al (JP 2001-138482) in view of Barton et al (US 6617772) in further view of Yakou et al (US 5855637).

Toyoda/Barton disclose all the limitations set forth, as described above, except the alignment step comprises use of Charge-Coupled Device (CCD) and alignment marks. Yakou et al ('637) teaches the alignment step comprises use of Charge-Coupled Device (CCD) (36A and B; figure 1; column 8 lines 35-45) and alignment marks (2b and 2c; figure 9; column 11 lines 49-57) in order to form a stronger bond between the spacer and substrate (column 4 line 66 to column 5 line 4). It would have been obvious at the time of the invention to one of ordinary skill in the art to modify the method of positioning spacers of Toyoda/Barton with the alignment step of Yakou et al ('637). Motivation for combining would be to form a stronger bond between the spacer and substrate.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 5-9, and 14-22 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elizabeth Rielley

Examiner
Art Unit 2879

CSigo 12/12/05
MARICELI SANTIAGO
PRIMARY EXAMINER